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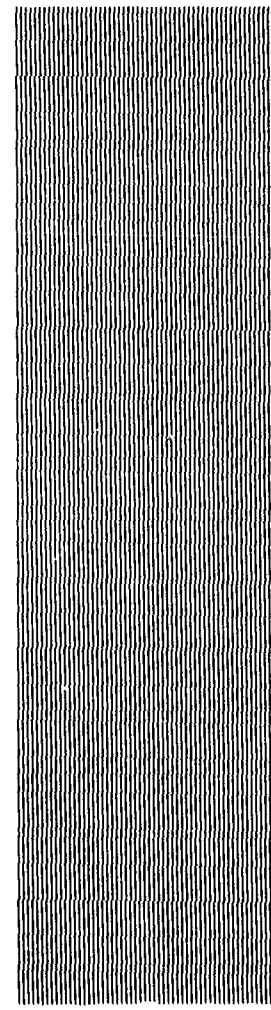
ROYAL SIGNALS AND RADAR ESTABLISHMENT,
MALVERN

PURCHASE OF COMPUTER EQUIPMENT -
JUSTIFICATION AND COST APPRAISAL

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RSRE
Malvern, Worcestershire.



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ROYAL SIGNALS AND RADAR ESTABLISHMENT

Report 89023

Title: Purchase of computer equipment - justification and cost appraisal.

Author: R F Bateman

Date: December 1989

Summary

The Information Technology Strategy Committee (ITSC) has decided that a cost appraisal should be performed for all major computer equipment purchases made by RSRE. This report discusses the means of doing this based upon two spreadsheets.

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PURCHASE OF COMPUTER EQUIPMENT - JUSTIFICATION AND COST APPRAISAL

1. INTRODUCTION

The IT Strategy Committee has decided that a cost appraisal should be performed for all major computer equipment purchases at RSRE to ensure that RSRE receives value for money. This report consists of a commentary on two spreadsheets. Table 1 derives the support requirements and the results are then fed into Table 2 which derives the costs for the new computer system.

The appropriate cells on the spreadsheets marked with "****" should be filled in and the spreadsheets run. Whilst it will not be possible to give completely accurate answers to the support requirements, sufficient thought should be given to each task to ensure that reasonable support levels are indicated. If you believe that certain items do not apply to your system please give further information to show why this is so. If you require any help in estimating then seek help from CCF Support, but please realise that Support cannot fill in the whole form for you.

2. SUPPORT

The following notes explain the various items in table 1 which shows a separation between operations and system management. In a small system no such separation may exist since one person may well perform all the duties listed, but this does not matter for the purpose of this evaluation.

2.1 OPERATORS

This embraces the following items which will normally be carried out by an operator(s) as apposed to system management staff.

Fault handling:- Noting, logging and curing any faults from whatever cause. Liaising with the maintenance or software team to ensure that the fault is fixed.

Media handling:- This covers all the operations associated with handling users tapes, backup of filestore, archiving and controlling magnetic disk. It will cover the time to mount/dismount media, type in the appropriate commands and note errors/completion.

State change:- Covers any major changes to the state of the machine. These will include changes of purpose e.g. from offering an interactive service to a dedicated use for simulation; changing from secure running to unclassified (allowing time for clearing the store and replacing exchangeable disks, etc.); upgrades to operating system, etc.

Environment:- Covers the time spent liaising with Works Services and any in-house control of air-conditioning/power equipment.

Software installation:- Includes the time needed to install and setup the software. Estimate the number of such packages you expect per year. Remember, there will be 3 or 4 new versions of major packages such as operating systems every year.

Operations development:- Covers the time expended in developing/automating the operations task so as to reduce the amount of effort expended in future.

Other:- Any other task that may be specific to this equipment. e.g. setting up a special display or data logger.

2.2 SYSTEM MANAGEMENT

System Management covers the remaining tasks.

2.2.1 PLANNING

2.2.1.1 Software Evaluation, Setup and liaison

This covers borrowing and reading software manuals, arranging for the loan of the software in question, setting up and running it for sufficiently long period to make a decision and liaison with the supplier to resolve any problems.

2.2.1.2 Hardware Evaluation, Setup and liaison

This covers borrowing and reading hardware manuals, arranging for loan of hardware, setting up and running for a sufficiently long period to make a decision and liaison with the supplier to resolve any problems.

2.2.1.3 Software Setup

This covers the setting up of any new software packages or new versions of existing packages.

2.2.1.4 Detailed Planning

This covers all the planning required to implement hardware or software changes.

2.2.2 FAMILIARISATION AND TRAINING

Covers the, sometimes extensive, period of initial training and familiarisation use of a software package or new piece of hardware.

2.2.3 SOFTWARE MAINTENANCE

Covers the time taken to organise the software maintenance requirements and includes liaison with the suppliers.

2.2.4 SUPPORT TO OTHER TASKS

Many project machines are used by more than one section within a division, but supported essentially by only one of the sections.

2.2.5 INTERNAL MEETINGS

Covers any internal liaison meetings.

2.2.6 DOCUMENTATION

Covers the organisation of documents from a supplier, production of any site-specific documentation and any 'library' functions that may be set up within the users team.

2.2.7 SYSTEM DEVELOPMENT

Covers any site specific software production or modification of existing software required to perform the task in hand or to enable more efficient operation of the system.

2.2.8 STAFF MANAGEMENT

Covers the required management effort, whether within a multi-person team or simply the line management effort required to support a single person performing these tasks.

2.2.9 HELP DESK

Even if no formal help desk is set up, one individual is normally recognised as the 'expert' within a team and inevitably spends time researching and answering problems posed by other team members. A realistic estimate of this should be made.

3. COST APPRAISAL

Table 2 itemises all the costs associated with the purchase and running of a computer system, including the results from table 1. They are:-

3.1 CAPITAL

3.1.1 Initial Cost

This includes the purchase cost of all items of computer related equipment, including networks.

3.1.2 Enhancements

Covers any planned enhancements over the next five year period. A reasonable contingency should be allowed for to cover unexpected requirements in this period. e.g. 20% of the total capital.

3.1.3 Software Licences

This can be a major item and needs to be researched thoroughly. It may be possible to reduce the cost by obtaining the licences via PATs 3b, but these items will still require to be maintained by RSRE.

3.2 MAINTENANCE

3.2.1 Hardware

GRANADA must be approached for a quotation to maintain the equipment to be ordered, remembering that the first year is likely to be free because the system is under warranty.

3.2.2 Software

Quotations should be obtained from all the likely suppliers of software.

3.3 STORES AND SERVICES

This can be a difficult item to estimate and the most successful way is probably to find a similar sized computer system supporting the same number of users and ask for details of their stores and services budget. The figures may then be adjusted reasonably to take account of any known differences in the teams and equipments.

3.4 SUPPORT

See the notes for table 1.

3.5 WORK SERVICES

This must cover the cost of any building works needed to house the new system, including the provision of any rooms set aside or modified to take special peripherals.

PURCHASE OF COMPUTING EQUIPMENT. COST APPRAISAL.

Please fill in cells marked ****

DIVISION:- ****
NAME OF CONTACT:- ****
LOCATION:- ****
TELEPHONE EXT:- ****

SUPPORT COSTS

SUPPORT:-	SUPPORT MANPOWER						TOTALS
	FW	SO	HSO	SSO	PSO	OTHER	
OPERATORS	****	****	****	****	****	****	****
FAULT HANDLING	****	****	****	****	****	****	****
MEDIA HANDLING:	****	****	****	****	****	****	****
USER MAG. TAPE	****	****	****	****	****	****	****
BACKUP	****	****	****	****	****	****	****
ARCHIVE	****	****	****	****	****	****	****
MAG. DISK	****	****	****	****	****	****	****
STATE CHANGE	****	****	****	****	****	****	****
ENVIRONMENT	****	****	****	****	****	****	****
SOFTWARE INSTALLATION	****	****	****	****	****	****	****
OPERATIONS DEVELOPMENT	****	****	****	****	****	****	****
OTHER ...	****	****	****	****	****	****	****
SYSTEM MANAGEMENT	****	****	****	****	****	****	****
PLANNING	****	****	****	****	****	****	****
SOFTWARE EVAL., SETUP & LIAISON	****	****	****	****	****	****	****
HARDWARE EVAL., SETUP & LIAISON	****	****	****	****	****	****	****
SOFTWARE SETUP	****	****	****	****	****	****	****
DETAILED PLANNING	****	****	****	****	****	****	****
FAMILIARISATION & TRAINING	****	****	****	****	****	****	****
SOFTWARE MAINTENANCE	****	****	****	****	****	****	****
SUPPORT TO TASK	****	****	****	****	****	****	****
INTERNAL MEETINGS	****	****	****	****	****	****	****
DOCUMENTATION	****	****	****	****	****	****	****
SYSTEM DEVELOPMENT	****	****	****	****	****	****	****
STAFF MANAGEMENT	****	****	****	****	****	****	****
HELP DESK	****	****	****	****	****	****	****
Total support	****	****	****	****	****	****	****
Cost of Support	****	****	****	****	****	****	****

TABLE 1

COSTS									
ITEM	FY YEAR					TOTALS			
	89-90	90-91	91-92	92-93	93-94	£			
CAPITAL:-									
Initial cost	***	***	***	***	***				
Enhancements	***	***	***	***	***				
Software Licences	***	***	***	***	***				
MAINTENANCE:-									
Hardware	***	***	***	***	***				
Software	***	***	***	***	***				
STORES AND SERVICES:-									
SUPPORT:- (from TABLE 1)	***	***	***	***	***				
WORK SERVICES	***	***	***	***	***				
TOTALS									

TABLE 2

Number of users supported:- ****

Cost per user =

DOCUMENT CONTROL SHEET

Overall security classification of sheetUNCLASSIFIED.....

(As far as possible this sheet should contain only unclassified information. If it is necessary to enter classified information, the box concerned must be marked to indicate the classification, eg (R), (C) or (S))

1. DRIC Reference (if known)	2. Originator's Reference REPORT 89023	3. Agency Reference	4. Report Security Classification UNCLASSIFIED	
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